

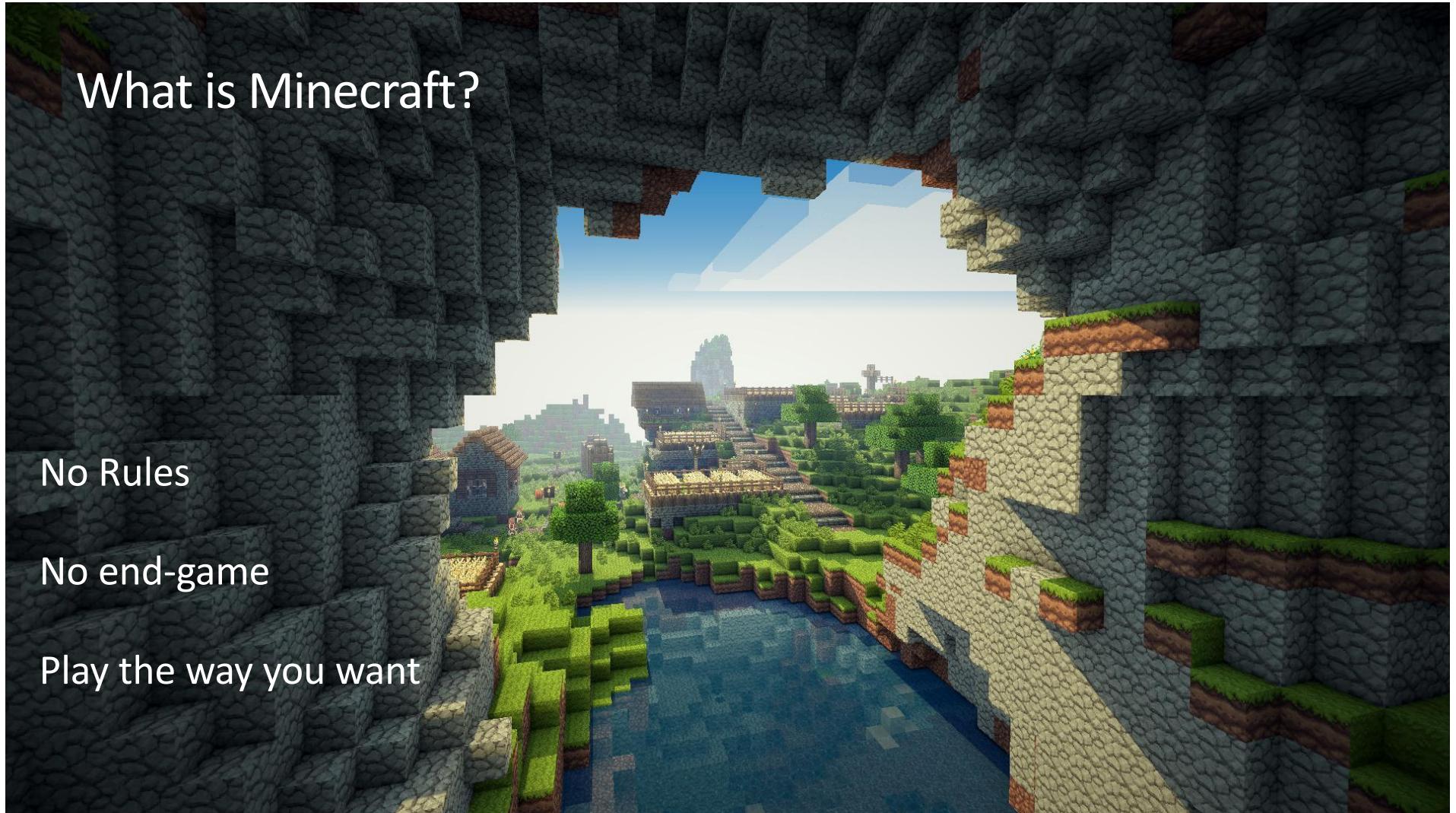
# Microsoft MakeCode for Minecraft

# What is Minecraft?

No Rules

No end-game

Play the way you want



# Minecraft: Education Edition

## Simple, Secure Login

Students and educators use Office 365 Education accounts to log in to Minecraft: Education Edition. This ensures secure access to the game and student data privacy.

## Education Edition Skins

Skins allow students to personalize their avatars, increasing student engagement and allowing educators to more easily differentiate students playing together.

## Flexible Multiplayer

An entire classroom can play in a world together without any need for an external server.

## Allow and Deny Blocks

Educators can set editable or immutable areas of the world – allowing, or denying, students the ability to build and focusing the learning to specific spaces.

## Border Blocks

Border Blocks help teachers define specific areas in the game that their students can build in.

## Fixed Inventory

Fixed Inventory slots provide educators with an opportunity to define specific inventory available to students, such as a camera, portfolio, or other blocks or tools.

## Non-Player Characters

A Non-Player Character, or NPC, can be placed in the game to provide information to students, give direction, and link to other resources.

## Chalkboards

Educators can use chalkboards to communicate learning goals or challenge students with problems to solve within the game.

## Camera and Portfolio

The Camera allows students to capture images of their work. The portfolio is where students save images of the work they've captured with the Camera, including an option to add captions.

## Classroom Mode

Classroom Mode is an extension of Minecraft: Education Edition that provides educators with more control of a Minecraft world and the students within it.

## Code Builder

Code Builder is an extension of Minecraft: Education Edition that allows educators and students to connect their Minecraft world to popular learn-to-code platforms.

# MINECRAFT

## EDUCATION EDITION

An enderman stole my homework

Play

Settings

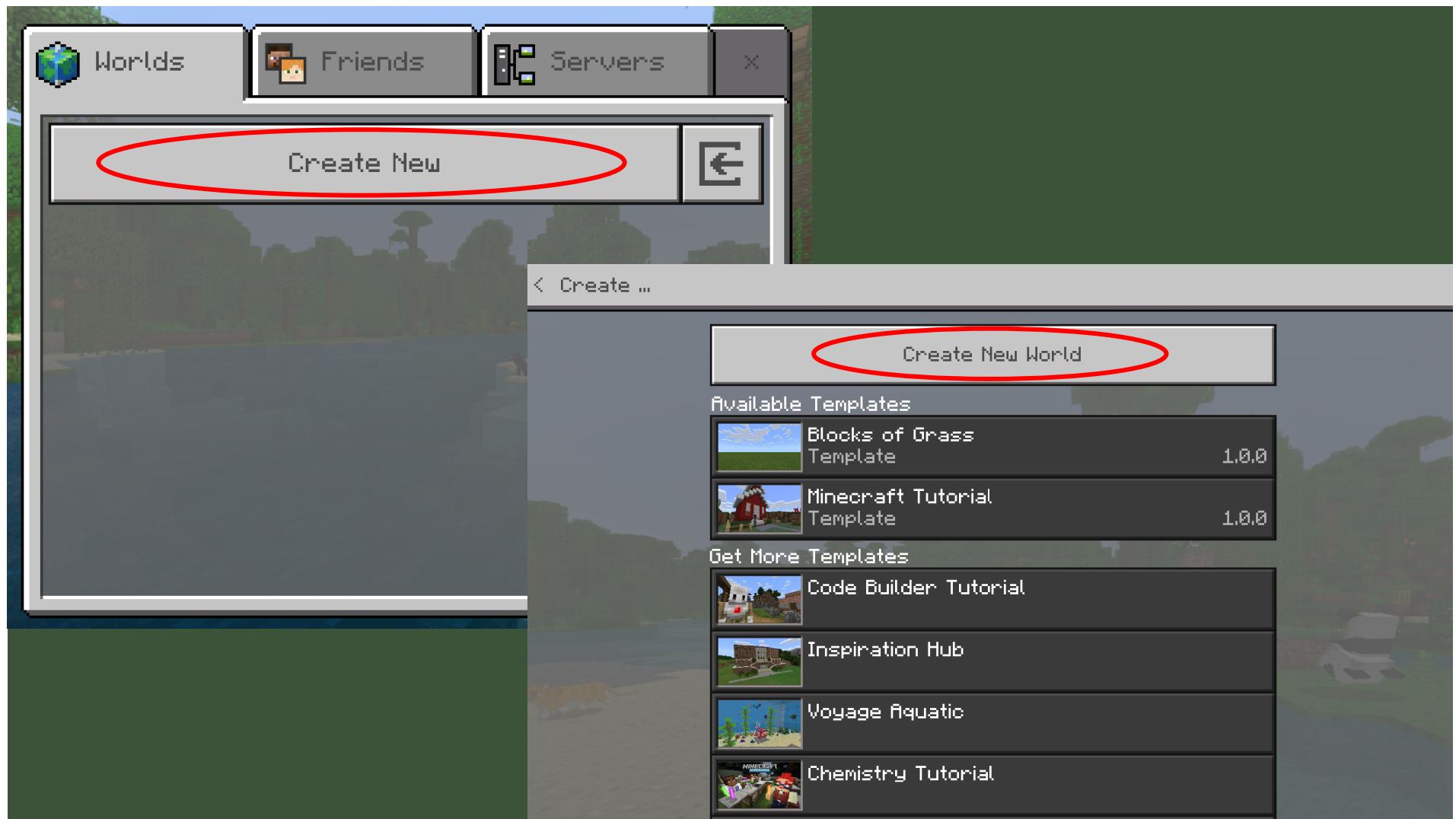
Library

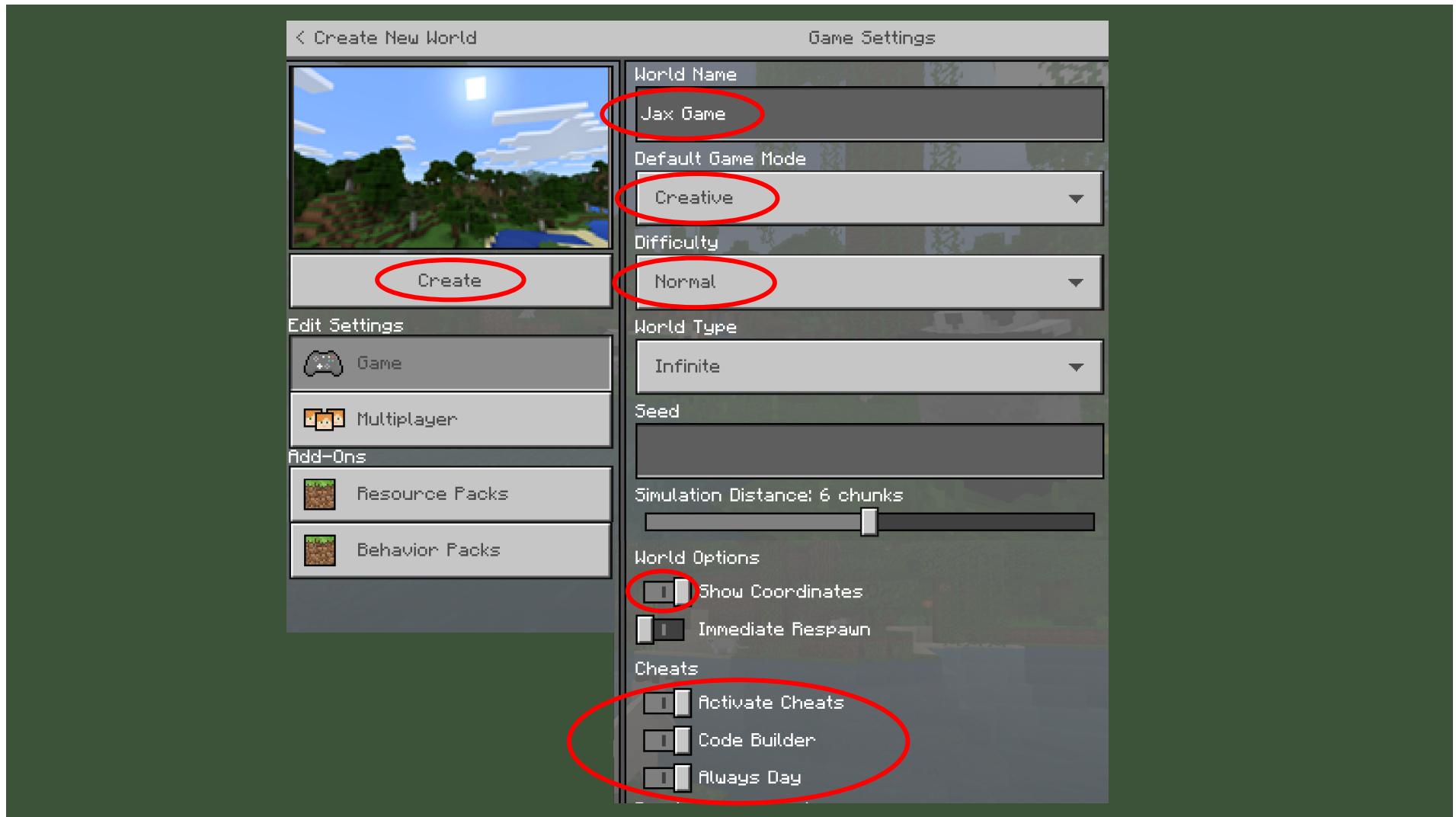
Educator Resources

JacquelineR



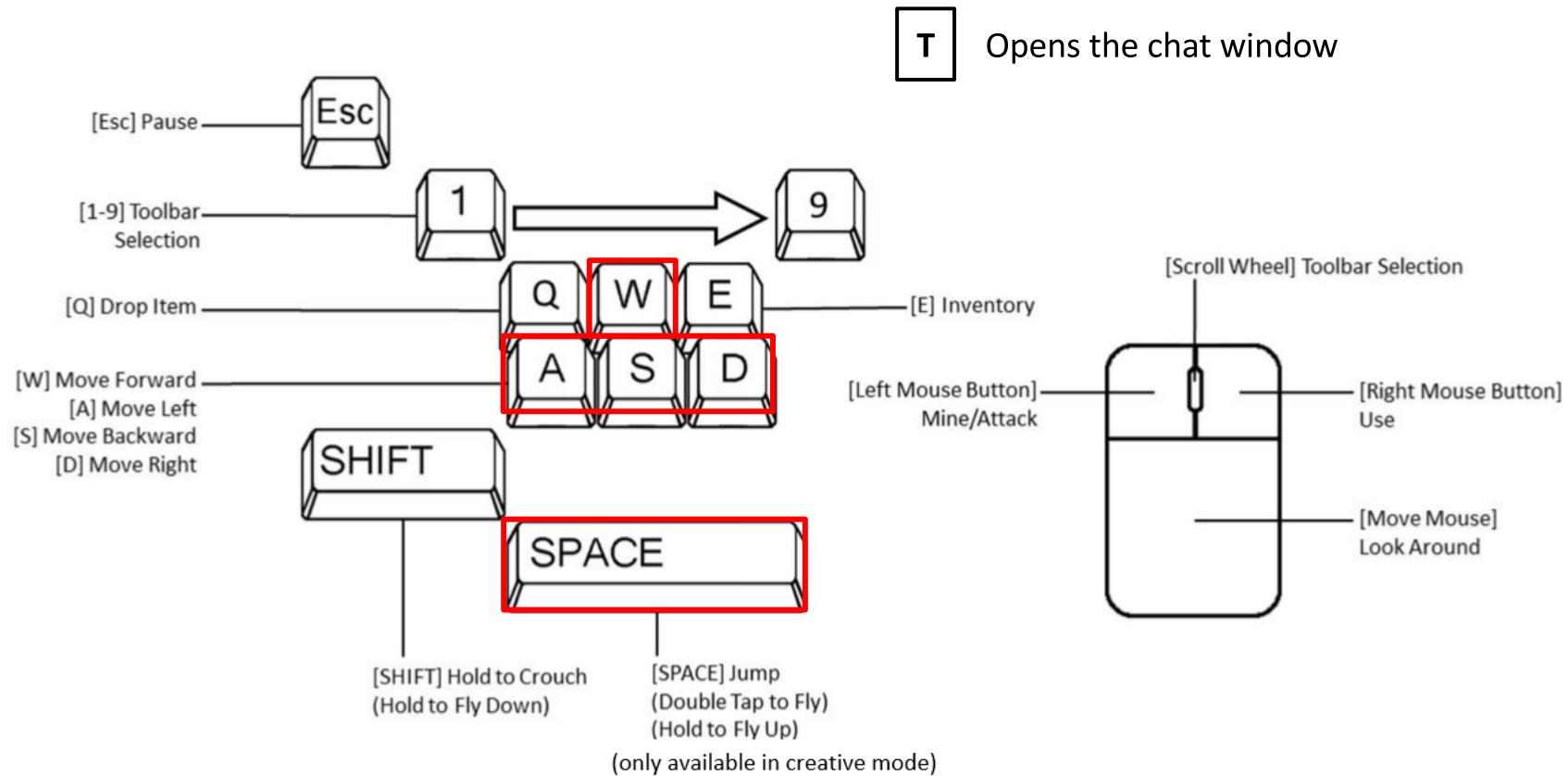
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# Minecraft Controls

Mouse & Keyboard



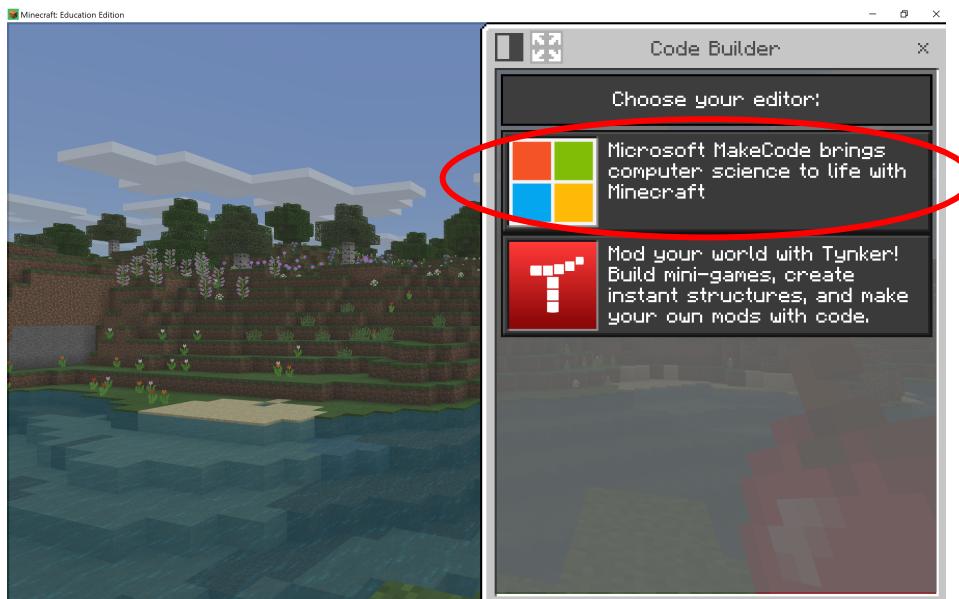
## New to Playing Minecraft Challenges

- Move forward, backwards, left and right ( WASD )
- Look around ( mouse )
- Jump up onto a block ( W + Space bar )
- Fly ( double-tap Space bar )
- Break a block ( mouse left-click )
- Put block into Toolbar
  - Open Inventory ( E )
  - Click and release to move blocks over

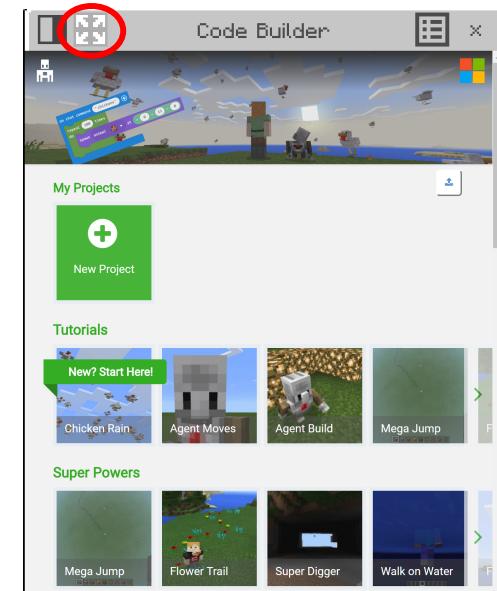


## Open MakeCode

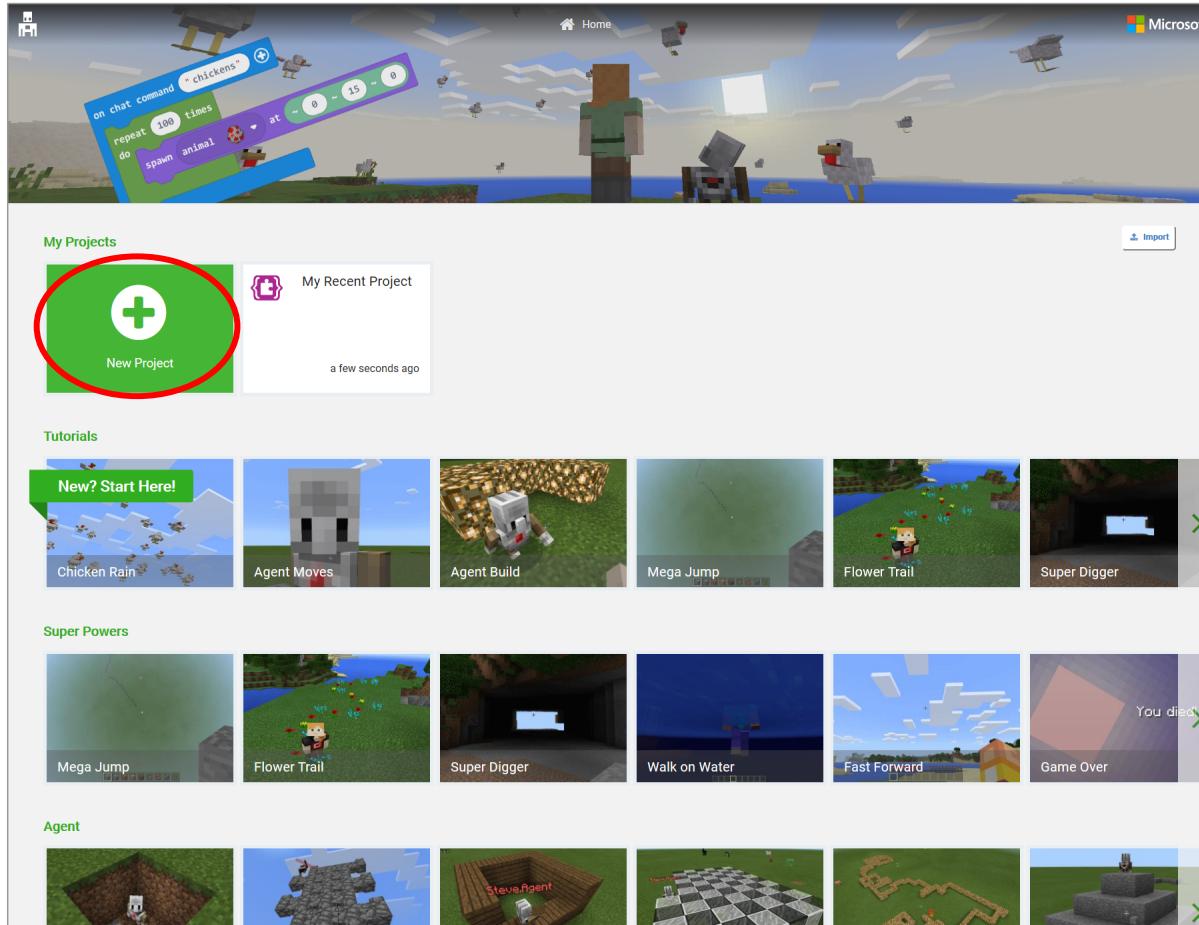
- Press 'C' on the keyboard to open Code Builder window
- Click on Microsoft MakeCode



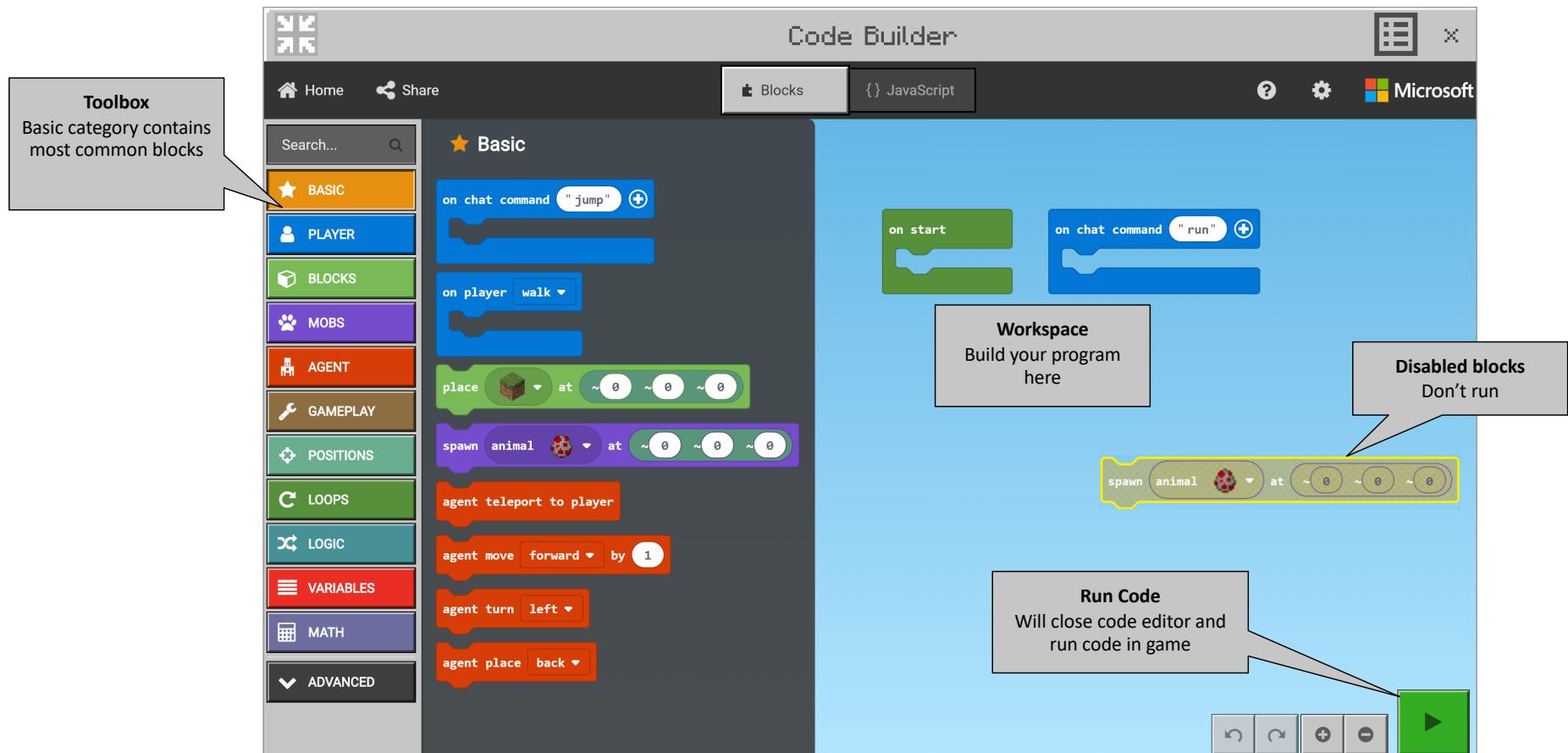
- Expand to full screen if it's only half screen



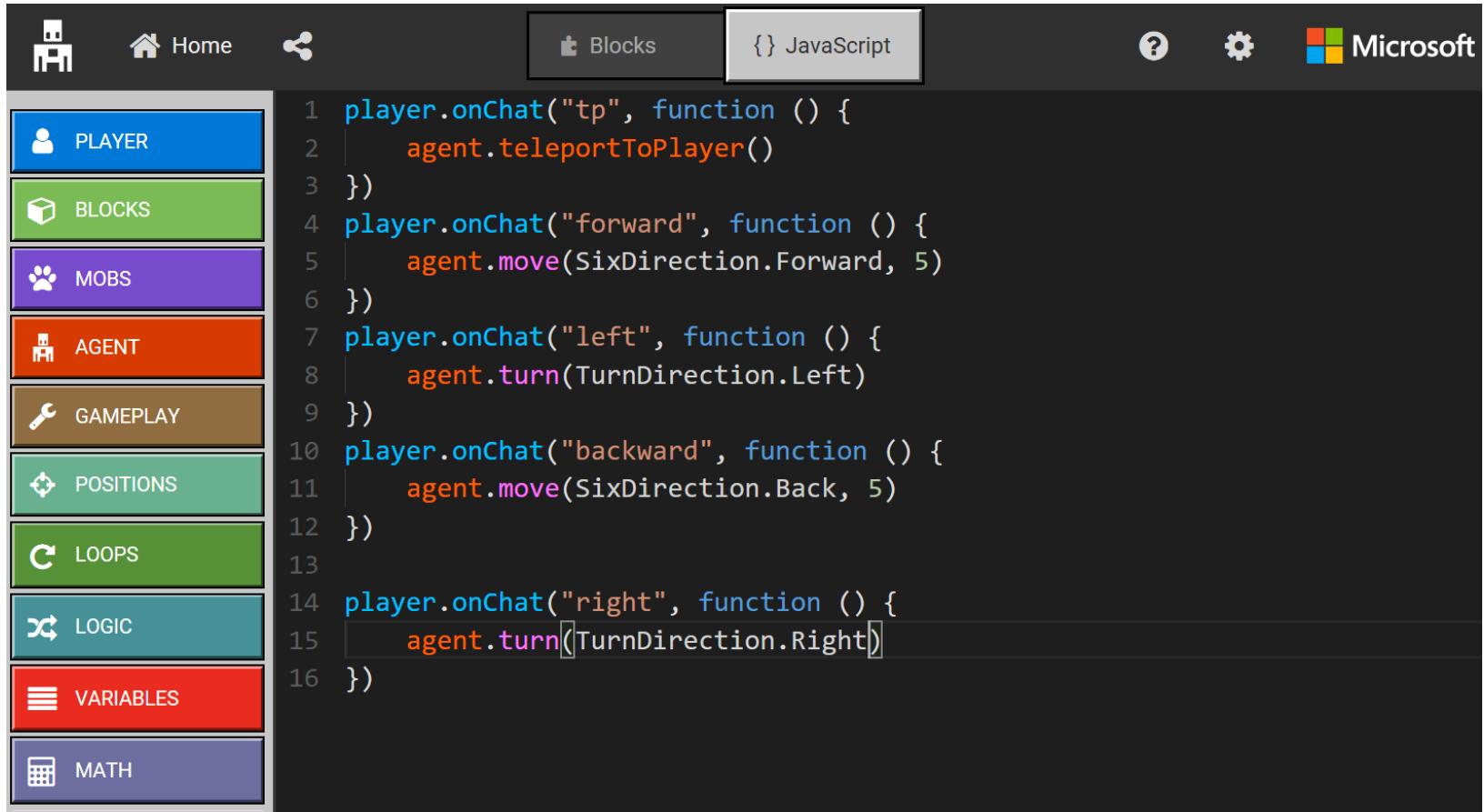
# MakeCode Home Page



# Editor



# JavaScript



The image shows the Scratch interface with the 'JavaScript' tab selected. On the left is a vertical palette of blocks categorized into ten groups: PLAYER, BLOCKS, MOBS, AGENT, GAMEPLAY, POSITIONS, LOOPS, LOGIC, VARIABLES, and MATH. The main workspace contains the following JavaScript code:

```
1 player.onChat("tp", function () {
2     agent.teleportToPlayer()
3 }
4 player.onChat("forward", function () {
5     agent.move(SixDirection.Forward, 5)
6 }
7 player.onChat("left", function () {
8     agent.turn(TurnDirection.Left)
9 }
10 player.onChat("backward", function () {
11     agent.move(SixDirection.Back, 5)
12 }
13
14 player.onChat("right", function () {
15     agent.turn(TurnDirection.Right)
16 })
```

# Events

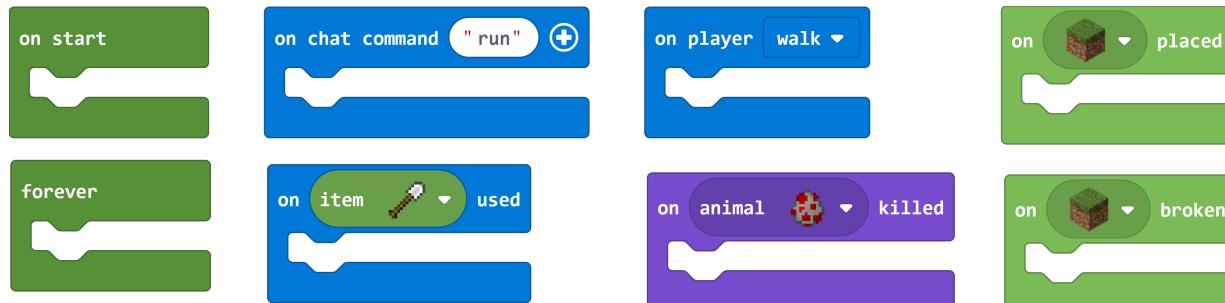
What is an “event”?

a wedding, a funeral, graduation ceremony...

Events can trigger actions:

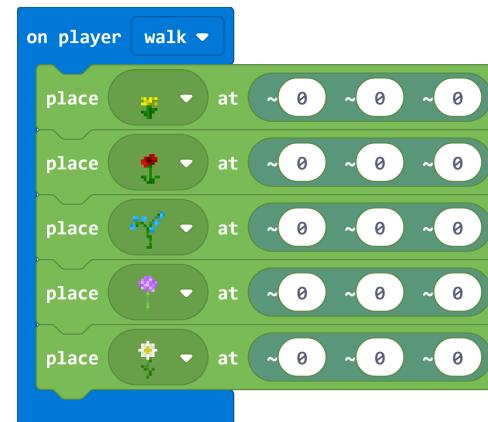
Event	Action
It starts raining	→ Open umbrella
The bell rings	→ Students go to class
The Power button is pressed	→ Computer turns on
Mouse button is clicked	→ Open application

Event handlers determine when to run different blocks of code in your program –



# Coding Challenge #1 Flower Trail

Leave a trail of flowers when your player walks around



## Advanced Challenges –

- When you fly, spawn birds
- When you swim, spawn fish

# Positions & Coordinates in Minecraft

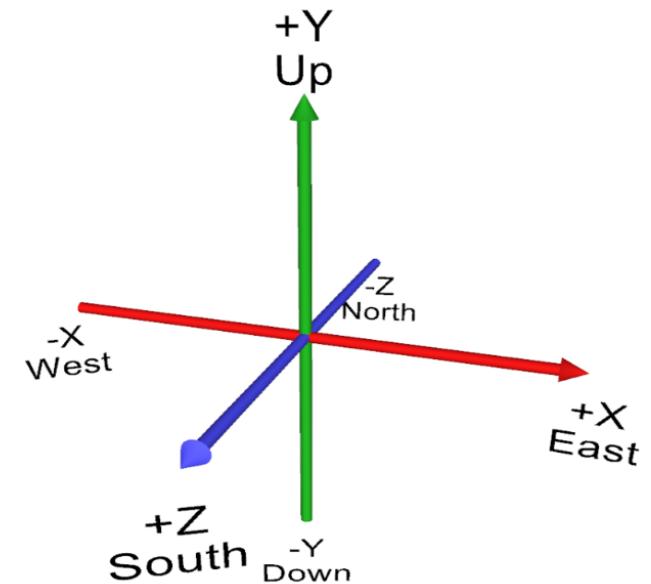
Player World Position ( X, Y, Z )



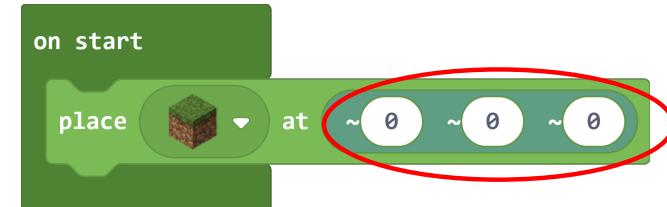
X = East, West

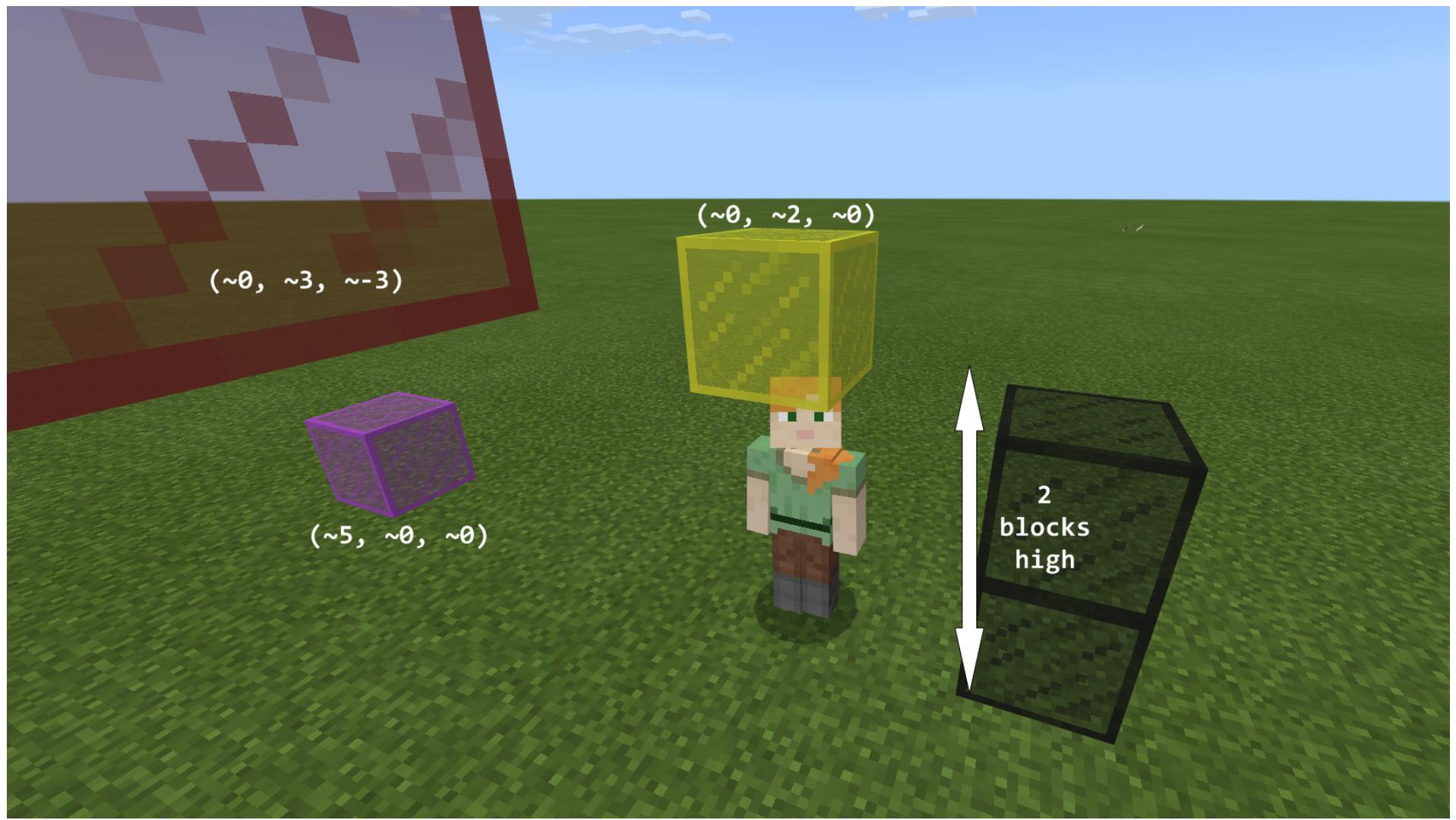
Y = Up, Down

Z = South, North



A Position relative to Player location ( ~X, ~Y, ~Z )





## Coding Challenge #2 Glass Box

On chat command “Box” – create a box of glass around your player



### Advanced Challenges –

- Try using the **Print** block to print messages in the sky
- Try using **Shapes** to create a sphere around your player

## The Agent

Your personal  
robot to  
command!



# Coding Challenge #3 Build walls of a house with the Agent

## Hints:

- First **teleport** your Agent to your Player
- Then **set blocks** in your Agent's inventory slot 1
- Use the **Place on Move = True** block for your Agent to place a block each time he/she moves
- Use the **Destroy Obstacles = True** block to clear a path for your Agent

## Advanced Challenges –

- Try adding a roof to your house
- Try building a Pyramid



- First, try moving your Agent in a square using a Repeat loop
- Then think about how you can add layers on top of your square

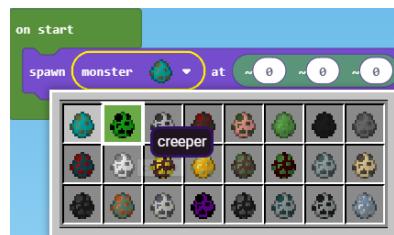
# Additional Coding Challenge Ideas



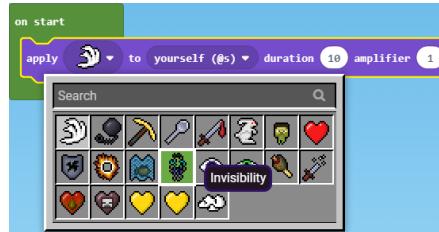
- Use Arrays to spawn different types of animals in a Zoo



- Use the Builder blocks to instantly create giant structures!

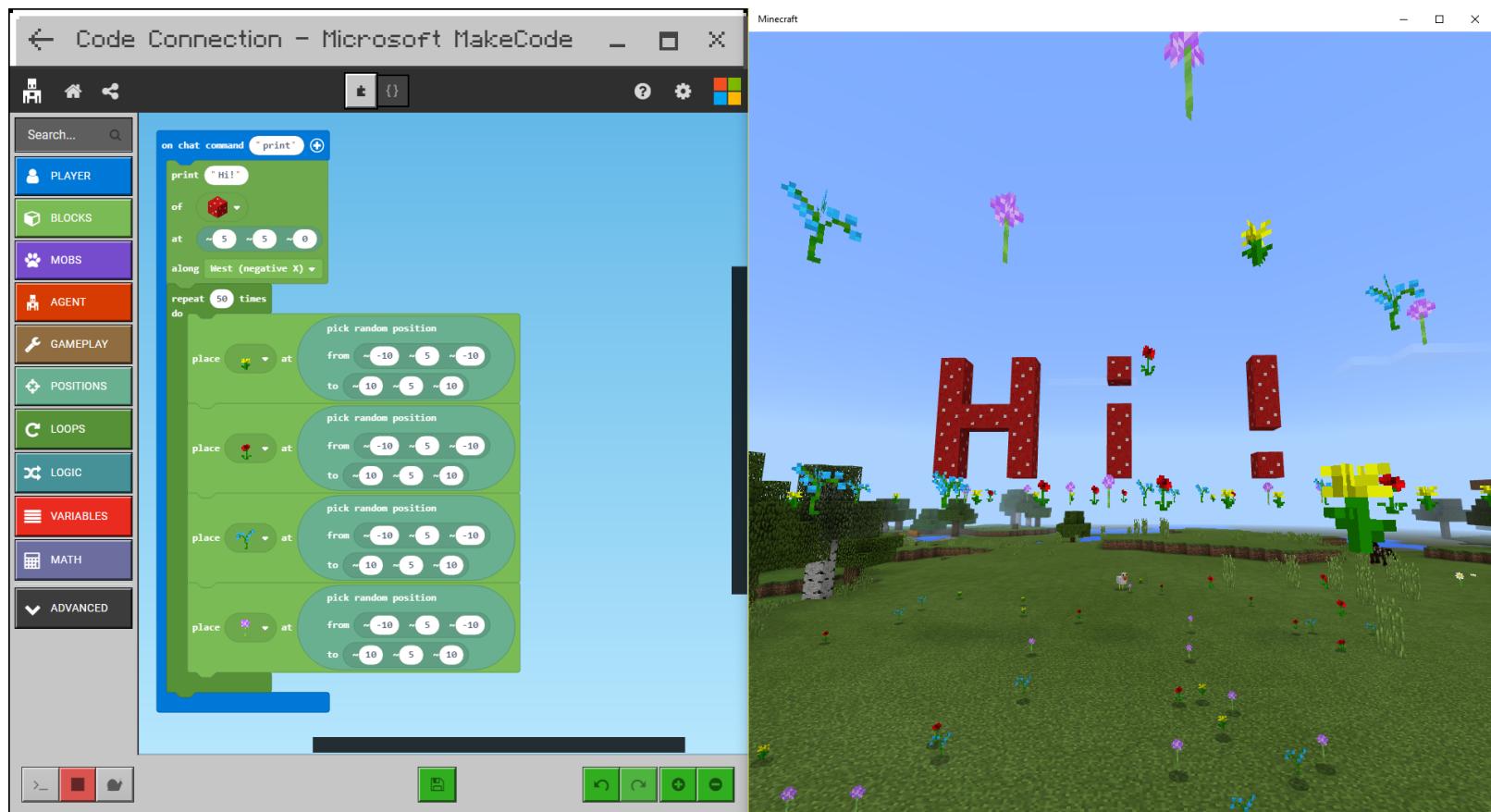


- Create a monster defense system



- Give yourself super powers using different effects

## Show & Tell – what did you code?





## Share your Code

- Click the Share button in the top left
- Give your project a name
- Click the Publish Project button
- Copy the URL somewhere (or take a picture)

